Docket No.: 1504.1027

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Masato WAKAMURA

Serial No. 10/500,448 Group Art Unit: 1761

Confirmation No. 2422

Filed: June 30, 2004 Examiner: Viren A. Thakur

For: METHOD FOR PRESERVING FOOD USING METAL-MODIFIED APATITE AND FOOD CONTAINER USED THEREFOR

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

Mail Stop Appeal Brief-Patents
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

In a Notice of Appeal filed August 4, 2008, Appellant appealed the Examiner's February 5, 2008 Office Action finally rejecting claims 15-25. The due date for filing the appeal brief is accordingly October 4, 2008. Submitted herewith are an Appeal Brief, a petition for extension of time of one month and the requisite fees set forth in 37 C.F.R.§ 41.20(b).

I. REAL PARTY IN INTEREST

The inventor assigned all rights in the subject application to Fujitsu Limited, according to the Assignment filed on December 1, 2004 which is recorded at Reel 016022, Frame 0885. Therefore, the real party in interest is Fujitsu Limited.

II. RELATED APPEALS AND INTERFERENCES

Appellant, appellant's legal representative, and the assignee do not know of any prior or pending appeals, interferences or judicial proceedings which may be related to, directly affect or be directly affected by, or have a bearing on, the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1-14 are cancelled. Claims 15-25 have been rejected and are on appeal.

IV. STATUS OF AMENDMENTS

No amendment has been filed after the Office Action mailed February 2, 2008.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Claim 15

Independent claim 15 is directed to "[a] method of preserving food" (see the specification, page 1, lines 7-10). The method of claim 15 includes "preparing Ti-modified calcium hydroxyapatite" (see FIG. 1 of the specification), that is illustrated as S1-S4 in the non-limiting embodiment in FIG. 2 described from page 12, line 23, to page 14, line 22 of the specification. The method of claim 15 further includes "sintering the Ti-modified calcium hydroxyapatite at 580 to 660°C" that is illustrated as S5 in the non-limiting embodiment in FIG. 2 described from page 14, line 23, to page 15 line 3. Finally the method of claim 15 includes "bringing food into contact with the sintered Ti-modified calcium hydroxyapatite for storage" which is described relative to curves A3 and A4 in FIG. 3 of the specification.

The antibacterial effect of Ti-modified calcium hydroxyapatite (Ti-CaHAP, see page 11, lines 20-22) is unexpectedly enhanced by preliminary sintering at 580 to 660º C. This unexpected result is experimentally tested (see examples 2 and 4 in the specification). Sintered Ti-CaHAP in contact with food stored under light exposure (A3 in FIG. 3) and without light exposure (A4 in FIG. 3) provides a higher antibacterial effect than the non-sintered Ti-CaHAP (A1 in FIG. 3 under light exposure and A2 in FIG. 3 without light exposure), all other conditions being the same (see Examples 1-4 described in the specification).

B. Claim 20

Independent claim 20 is directed to a food preserving article having "a substantially surrounding barrier having an inner surface, coated with a Ti-modified calcium hydroxyapatite which has undergone sintering at 580 to 660°C, in contact with stored food" (see the specification page 5 line 4 to page 16, line 14).

C. Claim 23

Independent claims 23 is directed to "a food preserving article" (see specification page 5 line 4 to page 16, line 14, Examples 2 and 3 on page 19) "produced by a method" including "sintering a material, containing a Ti-modified calcium hydroxyapatite, at 580 to 660°C" (see FIG. 2 and page 12, line 23 to page 14, line 22).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed are:

(i) the rejection of claims 15-18 and 20-25 under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent 5,658,530 to Dunn (hereinafter "Dunn") in view of JP 2000-3273315 to Wakamura et al. ("Wakamura"), U.S. Patent 6,004,667 to Sakurada et al. and U.S. Patent 4,882,196 to Shimamune et al. ("Shimamune") (see item 4 of the outstanding Office Action);

(ii) the rejection of claims 15-18 and 20-25 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Dunn in view of U.S. Patent No. 5,614,568 to Matawari et al. ("Matawari"), U.S. Patent No. 4,367,312 to Bontinck et al. ("Bontinck") in view of Shimamune (see item 6 of the outstanding Office Action);

(iii) the rejection of claims 15-25 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Sakurada in view of Wakamura, Dunn, and Shimamune (see item 8 of the outstanding Office Action); and

(iv) the rejection of claim 19 under § 103(a) as allegedly being unpatentable over the prior art references as applied to claim 15 and further in view of JP 2000-051041 to Okamoto ("Okamoto") (see items 5, 7, and 9 of the outstanding Office Action).

VII. ARGUMENT

A. Review of the Prior Art

Dunn discloses a method and apparatus for deactivating contaminants by irradiating with pulsed light (see Dunn's Abstract). The portions of Dunn cited in the Office Action describe the use of titanium dioxide (TiO_2) as a catalyst, but fail to teach or suggest Ti-modified calcium hydroxyapatite as admitted in the Office Action (see page 3, lines 10-12 of the Office Action mailed February 2, 2008).

Wakamura discloses Ti-modified calcium hydroxyapatite (Ti-CaHAP), that is heated only to 100º C (see paragraph [0019] of Wakamura) which is outside the claimed range of 580° C to 660°C. The Office Action cites paragraph [0013] of Wakamura as teaching heating at about 500° C. However, Applicants submit that paragraph [0013] actually suggests that heating up to 500° C is not necessary anymore. Wakamura includes no suggestion of using Ti-CaHAP for preserving food.

Sakurada discloses an article having anti-microbial properties which includes a low temperature melt injected film containing an interconnected network of re-solidified photo-semiconductor and conductor particles (see Sakurada's Abstract). Nothing has been cited or found in Sakurada that teaches or suggest Ti-CaHAP provides an enhanced antibacterial effect by preliminary sintering at 580 to 660º C.

Shimamune discloses a titanium composite material which includes a titanium or titanium alloy substrate, a base layer formed thereon of a calcium phosphate compound resulting from calcination of a hydrochloric or nitric acid aqueous solution of the calcium phosphate compound, and a covering layer thereon of a calcium phosphate compound formed by sintering a suspension of the calcium phosphate compound applied to the base layer. The composite material is useful as a biological implant (see Shimamune's Abstract). However there no evidence has been cited that Ti-CaHAP is formed at the boundary between the Ti substrate and the base layer. Shimamune specifies a temperature range of 300 and 900ºC applicable to a calcium phosphate compound coating (see col. 4, lines 41 -56 of Shimamune) but **not** to sintering Ti-CaHAP.

Matawari (according to the Abstract) discloses an antibacterial resin composition comprising (A) 100 parts by weight of a styrene resin, (B) 0.01 to 30 parts by weight of an antibacterial agent and (C) 0.01 to 30 parts by weight of a compound having a specific functional group.

Bontinck discloses a heat-sealable packaging film of styrene resins for protecting food packages (see Bontinck's Abstract, and col. 13, lines 34-43).

Okamoto discloses "tableware capable of obtaining essential taste of food and drink" (see Okamoto's statement of Problem to be solved"). Okamoto describes titanium dioxide (TiO_2) as a catalyst with antibacterial properties, but makes no reference to Ti-modified calcium hydroxyapatite.

B. Rejection under 35 U.S.C. §103

(i) Rejection based on Dunn, Wakamura, Sakurada, and Shimamune

1. Claim 15

It is submitted that the combination of Dunn, Wakamura, Sakurada and Shimamune do not render obvious "sintering the Ti-modified calcium hydroxyapatite at 580 to 660℃" and "bringing food into contact with the sintered Ti-modified calcium hydroxyapatite for storage" as recited in claim 15.

The Office Action relies on Shimamune to teach "sintering the Ti-modified calcium hydroxyapatite at 580 to 660℃" (see page 4, lines 29-39, i.e. the last two lines on page 4 of the Office Action mailed February 2, 2008).

Shimamune presents no evidence that Ti-CaHAP is formed at the boundary between the Ti substrate and the base layer. Shimamune specifies a temperature range of 300ºC to 900ºC

applicable to a calcium phosphate compound coating (see col. 4, lines 41-56 of Shimamune) but **not** to sintering Ti-CaHAP.

In column 4, lines 1-4, Shimamune discloses the objective of forming "a chemical bond with the calcium phosphate compound to form a firmly adherent calcium phosphate coating." So even if *arguendo* a Ti-modified calcium hydroxyapatite is formed boundary between the Ti substrate and the base layer, the Ti-modified calcium hydroxyapatite cannot be brought in contact with food because it appears in an inner layer.

Moreover, Shimamune states:

> If titanium or tin or a compound of such a metal is dissolved in the aqueous hydrochloric or nitric acid solution, titanium oxide and/or tin oxide precipitates as a base layer together with the calcium phosphate compound. If titanium oxide or tin oxide is included in the base layer, it forms a very firm bondage with titanium or the titanium alloy as the substrate to bond the base layer more firmly to the substrate. Titanium oxide and tin oxide are very stable chemically and do not undergo a chemical change in the body.

(See col. 4, lines 16-26 of Shimamune, emphasis added.)

Thus, Shimamune mentions only titanium oxide and/or tin oxide in addition to the calcium phosphate compound as outside components in contact with the body, these oxides being chemically stable to prevent future change. So, contrary to the assertion in the Office Action that Shimamune in combination with Wakamura would render obvious "sintering the Ti-modified calcium hydroxyapatite at 580 to 660℃" and "bringing food into contact with the sintered Ti-modified calcium hydroxyapatite for storage," in fact the claimed features are reconstructed in hindsight which is improper.

In *KSR Corp. v. Teleflex Inc.* (2007), the Supreme Court maintained that the analysis supporting a rejection under 35 U.S.C. 103(a) should be made explicit, and that it was "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed.

In this case, even if the teachings of the cited references are collated to allegedly suggest the recited features, it is unreasonable to assert that Shimamune's teachings renders obvious to a person of ordinary skill in the art sintering the Ti-modified calcium hydroxyapatite at 580 to 660℃ (where the antibacterial properties are unexpectedly enhanced) and bringing food in contact with the sintered Ti-modified calcium hydroxyapatite. In contrast to the recited feature, in Shimamune an inner layer of hydroxyapatite that is not even in contact with the biological tissue, is formed by sintering in a temperature range of 300-900℃ optimized for the inner layer thickness and to improve strength (see page 14 item 14 of the outstanding Office Action). The

inner layer in Shimamune is not in contact to the biological tissue (which can be considered to correspond to the food) and merely provides additional strength.

For the above reasons, independent claim 15 patentably distinguishes over the cited prior art.

Dependent claims 16-18 are not argued separately, but they are patentable at least by inheriting patentable features from independent claim 15, which patentably distinguishes over the cited prior art as discussed above.

2. Claim 20

The Office Action does not address all of the features recited in claim 20. The only statements in the Office Action related to claim 20 are quoted below:

> Regarding instant claims 20-25, the art already teaches food packaging and further teaches films and other food packaging materials to which titanium modified hydroxyapatite can be applied. Therefore, since the prior art teaches placing food into food packaging that is coated with titanium modified hydroxyapatite, that the food preserving articles, such as food containers and food wrapping would not have provided a patentable feature over the prior art

(see page 6, lines 19-24 of the Office Action).

As argued relative to independent claim 15, the cited prior art references fail to render obvious the unexpected enhanced antibacterial properties of Ti-modified calcium hydroxyapatite which has undergone sintering at 580 to 660℃ and that a Ti-modified calcium hydroxyapatite coating is put in contact with stored food. Therefore claim 20 patentably distinguishes over the cited prior art.

Dependent claims 21 and 22 are not argued separately, but they are patentable at least by inheriting patentable features from independent claim 20, which patentably distinguishes over the cited prior art as discussed above.

3. Claim 23

Since claim 23 is a product by process type of claim the claim may be patentable due to special unexpected properties of the claimed product. As stated in MPEP 2113:

> [E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made

by a different process. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

In this case, the claimed food preserving article has unexpected enhanced antibacterial properties due to sintering at 580 to 660º C. This unexpected result is experimentally tested (see examples 2 and 4 in the specification). Sintered Ti-CaHAP stored under light exposure (A3 in FIG. 3) and without light exposure (A4 in FIG. 3) provides a higher antibacterial effect than the non-sintered Ti-CaHAP (A1 in FIG. 3 under light exposure and A2 in FIG. 3 without light exposure), all other conditions being the same (see Examples 1-4 described in the specification).

For the reasons discussed above, the Office Action fails to prove that the recited "sintering a material, containing Ti-modified calcium hydroxyapatite, at 580 to 660°C" is rendered obvious by the prior art and that the antibacterial effect was foreseeable. Therefore, claim 23 is patentable over the cited prior art.

Dependent claims 24 and 25 are not argued separately, but they are patentable at least by inheriting patentable features from independent claim 23, which patentably distinguishes over the cited prior art as discussed above.

(ii) Rejection based on Dunn, Matawari, Bontinck and Shimamune

1. Claim 15

It is submitted that the combination of Dunn, Matawari, Bontinck and Shimamune do not render obvious "sintering the Ti-modified calcium hydroxyapatite at 580 to 660°C" and "bringing food into contact with the sintered Ti-modified calcium hydroxyapatite for storage" as recited in claim 15.

The Office Action relies on Shimamune to teach "sintering the Ti-modified calcium hydroxyapatite at 580 to 660°C" (see page 9, lines 9-10 of the Office Action mailed February 2, 2008). However, Shimamune presents no evidence that Ti-CaHAP is formed at the boundary between the Ti substrate and the base layer. Shimamune specifies a temperature range of 300°C and 900ºC applicable to a calcium phosphate compound coating (see col. 4, lines 41-56 of Shimamune) but **not** to sintering Ti-CaHAP.

In column 4, lines 1-4, Shimamune discloses the objective of forming "a chemical bond with the calcium phosphate compound to form a firmly adherent calcium phosphate coating." So even if *arguendo* a Ti-modified calcium hydroxyapatite is formed boundary between the Ti substrate and the base layer, the Ti-modified calcium hydroxyapatite cannot be brought in contact with food because it appears in an inner layer.

Moreover, Shimamune states:

> If titanium or tin or a compound of such a metal is dissolved in the aqueous hydrochloric or nitric acid solution, titanium oxide and/or tin oxide precipitates as a base layer together with the calcium phosphate compound. If titanium oxide or tin oxide is included in the base layer, it forms a very firm bondage with titanium or the titanium alloy as the substrate to bond the base layer more firmly to the substrate. Titanium oxide and tin oxide are very stable chemically and do not undergo a chemical change in the body.

(See col. 4, lines 16-26 of Shimamune, emphasis added).

Thus, Shimamune mentions only titanium oxide and/or tin oxide in addition to the calcium phosphate compound as outside components in contact with the body, these oxides being chemically stable to prevent future change. So, contrary to the assertion in the Office Action that Shimamune in combination with Wakamura would render obvious "sintering the Ti-modified calcium hydroxyapatite at 580 to 660°C" and "bringing food into contact with the sintered Ti-modified calcium hydroxyapatite for storage," in fact the claimed features are reconstructed in hindsight which is improper.

Even if the teachings of the cited references are collated to allegedly suggest the recited features, it is unreasonable to assert that forming an inner layer of hydroxyapatite that is not even in contact with the biological tissue, by sintering in a temperature range of 300-900°C optimized for the inner layer thickness and to improve strength (see page 14 item 14 of the outstanding Office Action), would render obvious to a person of ordinary skill in the art sintering the Ti-modified calcium hydroxyapatite at 580 to 660°C (where the antibacterial properties are unexpectedly enhanced) and bringing food in contact with the sintered Ti-modified calcium hydroxyapatite.

Therefore, independent claim 15 patentably distinguishes over the cited prior art.

Dependent claims 16-18 are not argued separately, but they are patentable at least by inheriting patentable features from independent claim 15, which patentably distinguishes over the cited prior art as discussed above.

2. Claim 20

The Office Action does not address all of the features recited in claim 20. The only statements in the Office Action related to claim 20 are quoted above and are identical with the above-reproduced paragraph from page 6, lines 19-24 of the Office Action (see page 10, lines 4-9 of the Office Action).

As argued relative to independent claim 15, the cited prior art references fail to render obvious the unexpected enhanced antibacterial properties of Ti-modified calcium hydroxyapatite which has undergone sintering at 580 to 660℃ and that a Ti-modified calcium hydroxyapatite coating is put in contact with stored food.

Therefore claim 20 patentably distinguishes over the cited prior art.

Dependent claims 21 and 22 are not argued separately, but they are patentable at least by inheriting patentable features from independent claim 20, which patentably distinguishes over the cited prior art as discussed above.

3. Claim 23

Since claim 23 is a product by process type of claim the claim may be patentable due to special unexpected properties of the claimed product. As stated in MPEP 2113:

> [E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

In this case, the claimed food preserving article has unexpected enhanced antibacterial properties due to sintering at 580 to 660º C. This unexpected result is experimentally tested (see examples 2 and 4 in the specification). Sintered Ti-CaHAP stored under light exposure (A3 in FIG. 3) and without light exposure (A4 in FIG. 3) provides a higher antibacterial effect than the non-sintered Ti-CaHAP (A1 in FIG. 3 under light exposure and A2 in FIG. 3 without light exposure), all other conditions being the same (see Examples 1-4 described in the specification).

For the reasons discussed above, the Office Action fails to prove that the recited "sintering a material, containing Ti-modified calcium hydroxyapatite, at 580 to 660℃" is rendered obvious by the prior art and that the antibacterial effect was foreseeable. Therefore, claim 23 is patentable over the cited prior art.

Dependent claims 24 and 25 are not argued separately, but they are patentable at least by inheriting patentable features from independent claim 23, which patentably distinguishes over the cited prior art as discussed above.

(iii) Rejection based on Sakurada, Wakamura, Dunn, and Shimamune

1. Claim 15

It is submitted that the combination of Sakurada, Wakamura, Dunn and Shimamune do not render obvious "sintering the Ti-modified calcium hydroxyapatite at 580 to 660℃" and "bringing food into contact with the sintered Ti-modified calcium hydroxyapatite for storage" as recited in claim 15.

The Office Action relies on Shimamune to teach "sintering the Ti-modified calcium hydroxyapatite at 580 to 660℃" (see page 11, lines 17-19 of the Office Action mailed February 2, 2008).

Shimamune presents no evidence that Ti-CaHAP is formed at the boundary between the Ti substrate and the base layer. Shimamune specifies a temperature range of 300ºC and 900ºC applicable to a calcium phosphate compound coating (see col. 4, lines 41 -56 of Shimamune) but **not** to sintering Ti-CaHAP.

In column 4, lines 1-4, Shimamune discloses the objective of forming "a chemical bond with the calcium phosphate compound to form a firmly adherent calcium phosphate coating." So even if *arguendo* a Ti-modified calcium hydroxyapatite is formed boundary between the Ti substrate and the base layer, the Ti-modified calcium hydroxyapatite cannot be brought in contact with food because it appears in an inner layer.

Moreover, Shimamune states:

> If titanium or tin or a compound of such a metal is dissolved in the aqueous hydrochloric or nitric acid solution, titanium oxide and/or tin oxide precipitates as a base layer together with the calcium phosphate compound. If titanium oxide or tin oxide is included in the base layer, it forms a very firm bondage with titanium or the titanium alloy as the substrate to bond the base layer more firmly to the substrate. Titanium oxide and tin oxide are very stable chemically and do not undergo a chemical change in the body.

(See col. 4, lines 16-26 of Shimamune, emphasis added).

Thus, Shimamune mentions only titanium oxide and/or tin oxide in addition to the calcium phosphate compound as outside components in contact with the body, these oxides being chemically stable to prevent future change. So, contrary to the assertion in the Office Action that Shimamune in combination with Wakamura would render obvious "sintering the Ti-modified calcium hydroxyapatite at 580 to 660℃" and "bringing food into contact with the sintered Ti-modified calcium hydroxyapatite for storage," in fact the claimed features are reconstructed in hindsight which is improper.

In *KSR Corp. v. Teleflex Inc.* (2007), the Supreme Court maintained that the analysis supporting a rejection under 35 U.S.C. 103(a) should be made explicit, and that it was "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed.

In this case, even if the teachings of the cited references are collated to allegedly suggest the recited features, it is unreasonable to assert that Shimamune's teachings renders obvious to a person of ordinary skill in the art sintering the Ti-modified calcium hydroxyapatite at 580 to 660℃ (where the antibacterial properties are unexpectedly enhanced) and bringing food in contact with the sintered Ti-modified calcium hydroxyapatite. In contrast to the recited feature, in Shimamune an inner layer of hydroxyapatite that is not even in contact with the biological tissue, is formed by sintering in a temperature range of 300-900℃ optimized for the inner layer thickness and to improve strength (see page 14 item 14 of the outstanding Office Action). The inner layer in Shimamune is not in contact to the biological tissue (which can be considered to correspond to the food) and merely provides additional strength.

Therefore, independent claim 15 patentably distinguishes over the cited prior art.

Dependent claims 16-18 are not argued separately, but they are patentable at least by inheriting patentable features from independent claim 15, which patentably distinguishes over the cited prior art as discussed above.

2. Claim 20

The Office Action does not address the features recited in claim 20.

As argued relative to independent claim 15, the cited prior art references fail to render obvious the unexpected enhanced antibacterial properties of Ti-modified calcium hydroxyapatite which has undergone sintering at 580 to 660℃ and that a Ti-modified calcium hydroxyapatite coating is put in contact with stored food. Therefore claim 20 patentably distinguishes over the cited prior art.

Dependent claims 21 and 22 are not argued separately, but they are patentable at least by inheriting patentable features from independent claim 20, which patentably distinguishes over the cited prior art as discussed above.

3. Claim 23

Since claim 23 is a product by process type of claim the claim may be patentable due to special unexpected properties of the claimed product. As stated in MPEP 2113:

> [E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

In this case, the claimed food preserving article has unexpected enhanced antibacterial properties due to sintering at 580 to 660º C. This unexpected result is experimentally tested (see examples 2 and 4 in the specification). Sintered Ti-CaHAP stored under light exposure (A3 in FIG. 3) and without light exposure (A4 in FIG. 3) provides a higher antibacterial effect than the non-sintered Ti-CaHAP (A1 in FIG. 3 under light exposure and A2 in FIG. 3 without light exposure), all other conditions being the same (see Examples 1-4 described in the specification).

For the reasons discussed above, the Office Action fails to prove that the recited "sintering a material, containing Ti-modified calcium hydroxyapatite, at 580 to 660℃" is rendered obvious by the prior art and that the antibacterial effect was foreseeable. Therefore, claim 23 is patentable over the cited prior art.

Dependent claims 24 and 25 are not argued separately, but they are patentable at least by inheriting patentable features from independent claim 23, which patentably distinguishes over the cited prior art as discussed above.

(iv) Rejections of Dependent Claim 19

In items 5, 7 and 9, claim 19 was rejected under 35 U.S.C. § 103(a) as unpatentable over the combination used to reject claim 15 in items 4, 6 and 8, respectively, with the addition of Okamato. However, Okamoto does not correct or compensate for the above-identified failure of the combinations of references to render obvious independent claim 15. Therefore, claim 19 is patentable at least by inheriting patentable features from independent claim 15, which patentably distinguishes over the cited prior art as discussed above.

VIII. Conclusion and Summary

Applicants submit that claims 15-25 patentably distinguish over the prior art. Reversal of the Examiner's rejection is respectfully requested.

Respectfully submitted,

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Date: November 4, 2008

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IX. CLAIMS APPENDIX

15. A method for preserving food, comprising:

preparing Ti-modified calcium hydroxyapatite;

sintering the Ti-modified calcium hydroxyapatite at 580 to 660℃; and

bringing food into contact with the sintered Ti-modified calcium hydroxyapatite for storage.

16. The method according to claim 15, wherein said bringing the food into contact with the sintered Ti-modified calcium hydroxyapatite includes at least one of putting the food in a container having an inner surface coated with the sintered Ti-modified calcium hydroxyapatite and putting the food in a container made of a material containing the sintered Ti-modified calcium hydroxyapatite.

17. The method according to claim 15, wherein said bringing the food into contact with the sintered Ti-modified calcium hydroxyapatite includes at least one of wrapping the food in a food wrapping film having a surface coated with the sintered Ti-modified calcium hydroxyapatite and wrapping the food in a food wrapping film made of a material containing the sintered Ti-modified calcium hydroxyapatite.

18. The method according to claim 15, wherein said bringing the food into contact with the sintered Ti-modified calcium hydroxyapatite includes at least one of applying the sintered Ti-modified calcium hydroxyapatite to a surface of the food and adding the sintered Ti-modified calcium hydroxyapatite to the food.

19. The method according to claim 15, wherein said bringing the food into contact with the sintered Ti-modified calcium hydroxyapatite includes bringing the food into contact with tableware having a surface coated with the sintered Ti-modified calcium hydroxyapatite.

20. A food preserving article, comprising:

a substantially surrounding barrier having an inner surface, coated with a Ti-modified calcium hydroxyapatite which has undergone sintering at 580 to 660℃, in contact with stored food.

21. The food preserving article according to claim 20, wherein the food preserving article is a food container.

22. The food preserving article according to claim 20, wherein the food preserving article is a food wrapping film.

23. A food preserving article produced by a method comprising:
sintering a material, containing a Ti-modified calcium hydroxyapatite, at 580 to 660℃.

24. The food preserving article according to claim 23, wherein the food preserving article is a food container.

25. The food preserving article according to claim 23, wherein the food preserving article is a food wrapping film.

X. EVIDENCE APPENDIX

(None)

XI. RELATED PROCEEDING APPENDIX

(None)